GEANT-3.21 Ring Cooling Simulation.
Emittance Exchange (preliminary)

Usubov

Used parameters

- Balbekov 52 cm bending radius ring.
- Circumference = 36.9547 m
- $B_D = 1.45485\,T$
- RF frequency = 201.0 MHz
- RF gradient = 12.704 GigaV/cm

Initial beam conditions

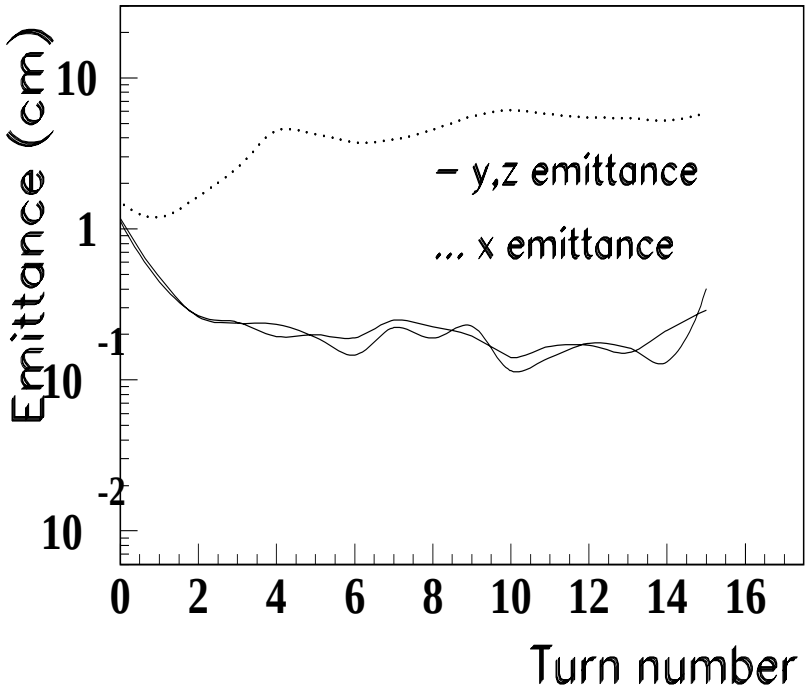
- $E_0 = .250000$ GeV/c
- $\sigma_{Etot} = 18\, MeV/c$

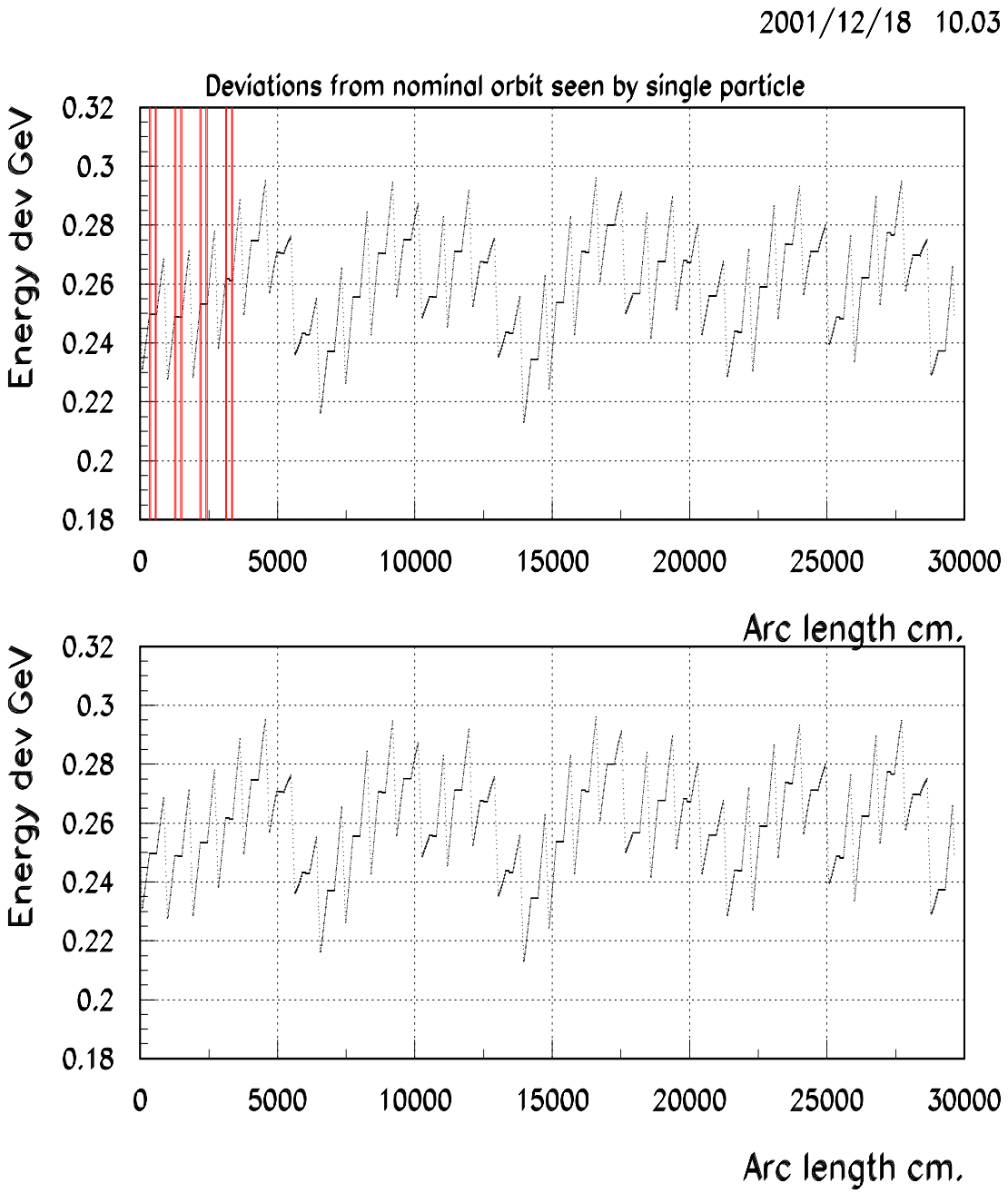
- $\sigma_{Px} = \sigma_{Py} = 32\, MeV/c$

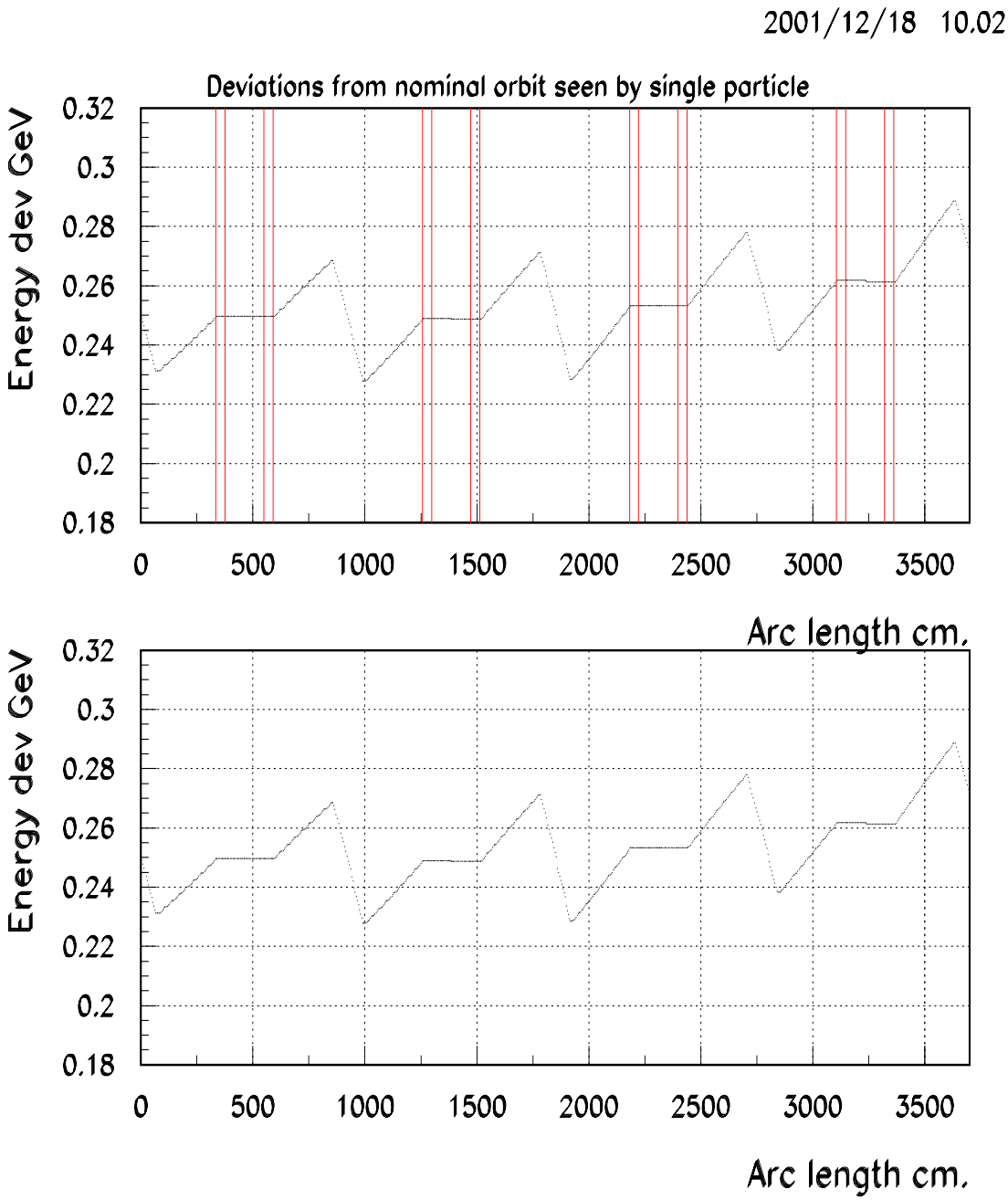
- $\sigma_x = \sigma_y = 4\, cm$
- $\sigma_z = 8\, cm$

$N_{ev} = 900$ was simulated
$(x, P_x,), (y, P_y), (z, P_z)$
after each $t = 0.135002e - 06$ sec
(t correspond 1 turn time with
$p_0 = .226575$ GeV/c and
NO absorb. NO RF's)

The transmission after 15 turns was 46%.


Emittance (cm)
10
1
-1
10
-2
10
0
2
4
6
8
10
12
14
16
Turn number
– y,z emittance
... x emittance


2001/12/18 10.03
Deviations from nominal orbit seen by single particle
Energy dev GeV
0.32
0.3
0.28
0.26
0.24
0.22
0.2
0.18
0
5000
10000
15000
20000
25000
30000
Arc length cm.
Energy dev GeV
0.32
0.3
0.28
0.26
0.24
0.22
0.2
0.18
0
5000
10000
15000
20000
25000
30000
Arc length cm.


2001/12/18 10.02
Deviations from nominal orbit seen by single particle
Energy dev GeV
0.32
0.3
0.28
0.26
0.24
0.22
0.2
0.18
0
500
1000
1500
2000
2500
3000
3500
Arc length cm.
Energy dev GeV
0.32
0.3
0.28
0.26
0.24
0.22
0.2
0.18
0
500
1000
1500
2000
2500
3000
3500
Arc length cm.